

WHAT IS CLAIMED IS:

1. A method of manufacturing a thin layer electrochemical cell comprising the steps of:

providing a separator layer;

providing a positive electrode layer,

providing a negative electrode layer, and

laminating together said positive and negative electrode layers onto said separator layer.

2. A method according to claim 1 further comprising the step of impregnating a non-conductive material to form a non-conductive region within at least one of said layers.

3. A method according to claim 1, wherein the step of laminating further comprises impregnating a non-conductive material to form a non-conductive sealed region within at least one of said layers.

4. A method according to claim 2, wherein said non-conduction region is formed as a border defining an outer boundary of said cell.

5. A method according to claim 4, wherein said non-conduction region extends through at least two of said layers.

6. A method according to claim 5, wherein said non-conduction region extends through all three of said layers.

7. A method according to claim 1, wherein the thin layer electrochemical cell is an open thin layer electrochemical cell.

8. A method according to claim 1, comprising the step of applying a partial layer of non-conduction material to the separator layer.

9. A method according to claim 7, wherein said non-conductive material is an adhesive material.

10. A method according to claim 9, wherein said adhesive material is any one of a group comprising urethane acrylate, epoxy acrylate, other cross-linked acrylates, and cured acrylates.

10. A method according to claim 9, wherein said non-conduction material is selected from the group consisting of a hot melt material, a hot melt pressure sensitive material and a UV curable pressure sensitive material.

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11. A method according to claim 8, comprising the step of adding an impregnation agent to said partial layer.

12. A method according to claim 11, wherein said impregnation agent is selected from the group consisting of polyisobutylene, ethyl cellulose, a fluoro polymer, an acrylic resin, a vinyl resin, and polyurethane.

13. A separator layer for use in the production of a flexible thin layer electrochemical cell, said separator layer comprising an impregnator applied thereto, which impregnator is susceptible to impregnate said

separator layer during lamination processing applied to said layer to form said cell.

14. A separator layer according to claim 13, wherein said impregnator comprises an adhesive material.

15. A separator layer according to claim 14, wherein said adhesive material is selected from the group consisting of a hot melt material, a hot melt pressure sensitive material and a UV curable pressure sensitive material.

16. A separator layer according to claim 13, wherein said impregnator comprises an impregnation agent operable to cause impregnation into at least one of said layers of at least one material of said impregnator.

17. A separator layer according to claim 13, wherein said impregnator is operable to restrict electrical conductivity in a region of any electrically conductive layer into which it is absorbed.

18. A separator layer according to claim 16, wherein said impregnation agent is selected from the group consisting of polyisobutylene, ethyl cellulose, a fluoro polymer, an acrylic resin, a vinyl resin, and polyurethane.

19. A separator layer according to claim 13, having a first side and a second side and having said impregnator applied on both of said first side and said second side for lamination thereto of further layers to form said cell.

20. A separator layer according to claim 19, having a positive electrode layer laminated to said first side and a negative electrode layer laminated to said second side, each electrode layer further comprising electrolyte.

21. A flexible thin layer electrochemical cell comprising a plurality of layers laminated to one another.

22. A flexible thin layer electrochemical cell according to claim 21, said layers comprising a conduction inhibitor absorbed therein to form non-conduction regions within said layers.

23. A flexible thin layer electrochemical cell according to claim 22, said conduction inhibitor comprising an adhesive material.

24. A flexible thin layer electrochemical cell according to claim 23, said adhesive material being is selected from the group consisting of a hot melt material, a hot melt pressure sensitive material and a UV curable pressure sensitive material.

25. A flexible thin layer electrochemical cell according to claim 22, said conduction inhibitor further comprising an impregnation agent.

26. A flexible thin layer electrochemical cell according to claim 25, said impregnation agent including is selected from the group consisting of polyisobutylene, ethyl cellulose, a fluoro polymer, an acrylic resin, a vinyl resin, and polyurethane.

27. A flexible thin layer electrochemical cell according to claim 22, said non-conducting regions arranged to define borders of said cell.

28. A flexible thin layer electrochemical cell according to claim 25, wherein said adhesive is suitable for laminating said layers together in a lamination process.

29. A flexible thin layer electrochemical cell according to claim 21, said cell being an open cell.

30. A base layer for use in the production of a flexible thin layer electrochemical cell, said base layer comprising an impregnator located thereon, which impregnator is operable to impregnate said separator layer during lamination processing applied to said layer to form said cell.

31. A base layer according to claim 30, wherein said impregnator comprises an adhesive suitable for adhering said layers during lamination processing.

32. A base layer according to claim 31, wherein said adhesive is selected from the group consisting of a hot melt material, a hot melt pressure sensitive material and a UV curable pressure sensitive material.

33. A base layer according to claim 31, wherein said impregnator further comprises an impregnation agent operable to cause impregnation into said layers of at least one material of said impregnator.

34. A base layer according to claim 33, wherein said impregnation agent is selected from the group consisting of po, ethyl cellulose, a fluoro polymer, an acrylic resin, a vinyl resin, and polyurethane.

35. A base layer according to claim 34, having a first side and a second side and wherein said impregnator is superimposed on both of said first side and said second side for lamination thereto of further layers to form said cell.

37: A base layer according to claim 35, wherein said impregnation region extends into said electrode layers.

39. A base layer according to claim 38, wherein said non-conducting regions define a border closing a region of said layer.